

C. APPLICANT'S COMMENTS

Claims 1-20 are pending in this Application with Claims 1, 9, 14, 16 being amended. No new matter is added by way of these amendments, and the amendments are supported throughout the Specification and the drawings. Reconsideration of Claims 1-20 is respectfully requested.

The Examiner's rejections will be considered in the order of their occurrence in the Official Action.

Paragraph 1 of the Official Action

The Official Action rejected as-filed Claims 1-5, 10, 11-14 under 35 U.S.C. §102(b) as being anticipated by Cordell (U.S. Patent No. 4,971,599). The Applicant respectfully disagrees with this rejection.

It is important to first briefly discuss 35 U.S.C. §102 and its application to the present application. Under section 102(b), anticipation requires that the prior art reference disclose, either expressly or under the principles of inherency, every limitation of the claim.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Under 35 U.S.C. §102, anticipation requires that each and every element of the claimed invention be disclosed in the prior art. In addition, the prior art reference must be enabling, thus placing the allegedly disclosed matter in the possession of the public.

Akzo N.V. v. United States Int'l Trade Comm'n, 1 USPQ 2d 1241, 1245 (Fed. Cir. 1986), cert. denied, 482 U.S. 909 (1987) (emphasis added). Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration. *W.L. Gore & Assocs. v. Garlock, Inc.*, 220 USPQ 303, 313 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim. *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984).

Amended independent Claim 1 has the following features:

1. (Currently Amended) A biomass gasification system, comprising:
 - a primary combustion chamber;
 - a secondary combustion chamber fluidly connected to said primary combustion chamber;
 - a heat exchanger fluidly connected to said secondary combustion chamber; and
 - a rotating grate rotatably positioned within said primary combustion chamber for supporting the biomass during gasification, wherein said rotating grate is capable of rotating in a continuous rotational manner.**

Cordell merely teaches an “apparatus for gasifying solid organic materials” that has a primary combustion chamber, a secondary combustion chamber and a heat exchanger. However, Cordell does not teach “a **rotating grate** rotatably positioned within said primary combustion chamber for supporting the biomass during gasification, **wherein said rotating grate is capable of rotating in a continuous rotational manner**” as specifically stated in independent Claim 1.

More particularly, Cordell merely teaches a “first annular plate member 421” which contains “a series of radially extending slots 423” and a “second annular plate member 422” which contains “a spaced-apart series of radially extending slots 424.” (Column 7, Lines 46-50; See Figures 1, 5, 6 and 8.) In Cordell, the “first annular plate member 421 is mounted so as to be rotatable through a **limited arc** with respect to the second annular plate member 422, and a handle 425 is provided to **manually effect such rotation on a periodic basis, as desired.**” (Column 7, Lines 57-63.) The sole

purpose of this “periodic” rotation of the first plate member with the second plate member in Cordell is for aligning their respective slots to allow for the nonoxidizable materials to fall through the slots by gravity. (Column 7, Lines 63-68; Column 8, Lines 1-8). Figure 1 below shows the structure of the two plate members in Cordell:

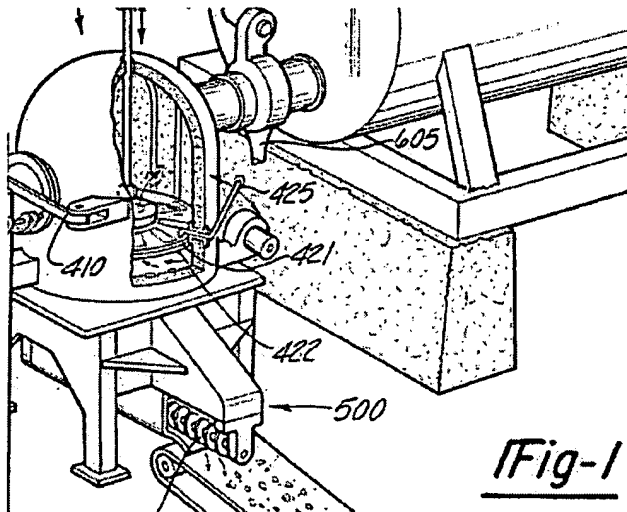


Figure 1 of Cordell (U.S. Patent No. 4,971,599)

Cordell does not teach a “rotating grate” (it merely has a “limited arc” of movement for aligning the slots). In addition, Cordell does not teach a rotating grate that **“is capable of rotating in a continuous rotational manner”** as express in independent Claim 1. The rotating grate within the present invention is for allowing fresh biomass to enter the rotating grate in a location wherein the old biomass has spent the most time and therefore has been completely broken down (the fresh biomass in effect replaces the old biomass that has been broken down). This simply is not shown, disclosed or suggested within Cordell. In addition, the present invention teaches a “plurality of openings” within the rotating grate for allowing passage of air upwardly to enhance the combustion within the primary combustion chamber which is not shown in Cordell. (See Amended Claim 14).

The Applicant respectfully submits that Cordell does not qualify as appropriate prior art under 35 U.S.C. §102(b) as Cordell does not disclose (expressly or inherently) all of the elements of independent Claims 1-5, 10, 11-14.

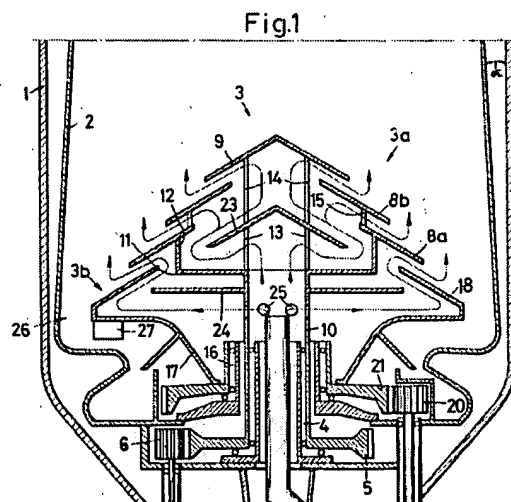
Paragraph 2 of the Official Action

The Official Action rejected as-filed Claims 16, 19, 20 under 35 U.S.C. §102(b) as being anticipated by Kupfer (U.S. Patent No. 4,014,664). The Applicant respectfully disagrees with this rejection.

Amended Claim 16 has the following features:

16. (Currently Amended) A biomass gasification system, comprising:
a primary combustion chamber;
a rotating grate rotatably positioned within said primary combustion chamber, wherein said rotating grate has a substantially planar upper surface for supporting the biomass during gasification, wherein said rotating grate is capable of rotating in a continuous rotational manner; and
a drive motor mechanically connected to said rotating grate for rotating said rotating grate.

Kupfer merely teaches a “reactor for the pressure gasification of coal” that has a pair of grates (3a and 3b) that “*assists the movement of the ash formed in the coal bed during the gasification process*” wherein the grates have a “conical shape” for directing the ash downwardly during operation thereof. Below is an illustration of Figure 1 of Kupfer:



It can be readily seen that Kupfer does not teach (or suggest) “a **rotating grate** rotatably positioned within said primary combustion chamber, wherein said

rotating grate has a substantially planar upper surface for supporting the biomass during gasification". The present invention uses the "substantially planar upper surface" to support (i.e. prevent the biomass from falling downwardly until fully broken down) which is completely the opposite purpose (and structure) of the grates in Kupfer.

The Applicant respectfully submits that Kupfer does not qualify as appropriate prior art under 35 U.S.C. §102(b) as Kupfer does not disclose (expressly or inherently) all of the elements of independent Claims 16, 19, 20.

Paragraph 3 of the Official Action

The Official Action rejected as-filed Claims 16-18 under 35 U.S.C. §102(b) as being anticipated by Fahrenstock (U.S. Patent No. 1,709,902). The Applicant respectfully disagrees with this rejection.

Fahrenstock merely teaches an apparatus for feeding and burning fuel that has a "distributing plate 11". The distributing plate 11 is not for supporting biomass during combustion but is for "distributing" the biomass during entry from the pipe 10. (Page 1, Lines 94-96; Page 2, Lines 3-7, Lines 87-93.)

The Applicant respectfully submits that Fahrenstock does not qualify as appropriate prior art under 35 U.S.C. §102(b) as Fahrenstock does not disclose (expressly or inherently) all of the elements of independent Claims 16-18.

Paragraph 4 of the Official Action

The Official Action rejected as-filed Claims 1, 3, 11-20 under 35 U.S.C. §102(b) as being anticipated by Marangoni (U.S. Patent No. 4,846,082). The Applicant respectfully disagrees with this rejection.

As with the other references, Marangoni does not teach:

a rotating grate rotatably positioned within said primary combustion chamber, wherein said rotating grate has a substantially planar upper surface for supporting the biomass during gasification, wherein said rotating grate is capable of rotating in a continuous rotational manner

Marangoni merely teaches “arms 19 [that] continuously entrain and displace the tires being burnt so as to increase the combustion air amount supplied to the burning tires”. (Column 3, Lines 28-44). The “arms” of Marangoni are not a rotating grate and do not support any biomass material in a primary chamber. The arms of Marangoni merely scrape the frustum of the cone shaped bottom. (Column 3, Lines 32-33).

The Applicant respectfully submits that Marangoni does not qualify as appropriate prior art under 35 U.S.C. §102(b) as Marangoni does not disclose (expressly or inherently) all of the elements of independent Claims 1, 3, 11-20.

Paragraph 5 of the Official Action

The Official Action rejected Claims 6-9, 15 under 35 U.S.C. §103(a) as being unpatentable over Cordell in view of Stolte. The Applicant respectfully disagrees with this rejection of these claims and incorporates by reference the above-stated discussion relating to the same.

In proceedings before the United States Patent and Trademark Office, the Examiner bears the burden of establishing a prima facie case of obviousness based upon the prior art. *In re Bell*, 26 USPQ2d 1529, 1530 (Fed. Cir. 1993). *In re Oetiker*, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). When references cited by the Examiner fail to establish a prima facie case of obviousness, the rejection is improper and will be overturned upon appeal. *In re Fine*, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). “To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.” *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985).

"To establish a prima facie case of obviousness, three basic criteria must be met." MPEP §706.02(j). First, there must be some **suggestion or motivation**, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a **reasonable expectation of success**. Finally, the prior art reference (or references when combined) **must teach or suggest all the claim limitations**. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The law regarding *obviousness* is clear -- any modification of the prior art must be suggested or motivated by the prior art. It is submitted that combining elements from different prior art references (in an attempt to establish obviousness) must be motivated or suggested by the prior art.

'Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under section 103, teachings of references can be combined only if there is some suggestion or incentive to do so.' [citation omitted] Although couched in terms of combined teachings found in the prior art, the same inquiry must be carried out in the context of a purported obvious "modification" of the prior art. The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification.

In re Fritch, 972 F.2d 1260; 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992), (in part quoting from *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 732 F.2d 1572, 1577; 221 USPQ 929, 933 (Fed. Cir. 1984)).

It is also submitted that the mere fact that one may argue that the prior art is capable of being modified to achieve a claimed structure does not by itself make the claimed structure obvious -- there must be a motivation provided by the prior art.

The examiner finds the claimed shape would have been obvious urging that (our emphasis) "it is obvious for one skilled in the art to form each

hook base of any desired shape *** since *this is within the capabilities of such a person.*" Thus, the examiner equates that which is within the capabilities of one skilled in the art with obviousness. Such is not the law. There is nothing in the statutes or the case law which makes "that which is within the capabilities of one skilled in the art" synonymous with obviousness.

The examiner provides no reason why, absent the instant disclosure, one of ordinary skill in the art would be motivated to change the shape of the coil hooks of Hancock or the German patent and we can conceive of no reason.

Ex parte Gerlach and Woerner, 212 USPQ 471 (PTO Bd. App. 1980) (emphasis in original).

For these reasons, among others, the combination of Cordell with Stolte cannot suggest the combination of features in applicant's Claims 6-9, 15, and it is therefore submitted that the rejection against these claims should be withdrawn and Claims 6-9, 15 allowed.

D. CONCLUSION

In light of the foregoing amendments and remarks, early reconsideration and allowance of this application are most courteously solicited. Should the Examiner consider necessary or desirable any formal changes anywhere in the specification, claims and/or drawing, then it is respectfully asked that such changes be made by Examiner's Amendment, if the Examiner feels this would facilitate passage of the case to issuance. Alternatively should the Examiner feel that a personal discussion might be helpful in advancing this case to allowance, they are invited to telephone the undersigned.

Respectfully submitted,



Michael S. Neustel (Reg. No. 41,221)
NEUSTEL LAW OFFICES, Ltd.
2534 South University Drive, Suite No. 4
Fargo, North Dakota 58103

October 14, 2004

Date

Telephone: (701) 281-8822
Facsimile: (701) 237-0544
e-mail: Michael@neustel.com